

**REMARKS**

Entry of the foregoing, reexamination and reconsideration of the application identified in caption, as amended, pursuant to and consistent with 37 C.F.R. §1.116 and in light of the remarks which follow, are respectfully requested.

At the outset, Applicants thank Examiner Shosho of the U.S. Patent and Trademark Office for her time and consideration in participating in an interview with Applicants' representative on August 13, 2003. The substance of the interview is accurately reflected in the Interview Summary (Paper No. 9) issued by the Patent Office.

By the above amendments, claim 1 has been amended for clarification purposes by reciting that R<sup>8</sup> represents a hydrogen atom, an aliphatic group or an aromatic group. Support for this amendment can be found in the instant specification at least at page 8, lines 1 and 2. Claims 1, 13, 17 and 20 have been amended for clarification purposes by reciting that the oil soluble dye and the vinyl polymer are separate compounds. Support for these amendments can be found in the instant specification at least at pages 32-55 taken in connection with pages 64-71. During the interview, the Examiner agreed to enter the above amendments at this stage of prosecution (See Interview Summary).

Claim 5 has been amended for readability purposes by adding the word "is" between "oil soluble dye" and "dispersed." Claims 24 and 25 have been amended for readability purposes by deleting the redundant phrase "a substituted." Claims 22-25 have been amended to correct typographical errors by replacing the term "-NR<sup>170</sup>SO<sub>2</sub>R<sup>171</sup>" with "-NR<sup>70</sup>SO<sub>2</sub>R<sup>71</sup>." Entry of the above amendments is proper at least because they place the application in condition for allowance of in better form for appeal. See M.P.E.P. §714.12.

In the Official Action, claims 22-25 stand rejected under 35 U.S.C. §112, second paragraph, for the reasons set forth at page 2 of the Official Action. In accordance with the Examiner's suggestion, claims 22-25 have been amended by replacing the term "-NR<sup>170</sup>SO<sub>2</sub>R<sup>171</sup>" with "-NR<sup>70</sup>SO<sub>2</sub>R<sup>71</sup>." Accordingly, withdrawal of the §112, second paragraph, rejection is respectfully requested.

Claims 1, 5, 6, 9, 10, 13, 17 and 20-25 stand rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 6,025,412 (*Sacripante et al*) or U.S. Patent No. 6,031,019 (*Tsutsumi et al*), either of which in view of Japanese Patent Document No. 03-231975 (*JP '975*). Withdrawal of this rejection is respectfully requested for at least the following reasons.

*Sacripante et al* relates to improved waterfast inks for use in ink jet printing processes (col. 1, lines 5 and 6). *Sacripante et al* discloses an ink composition formulated by chemically incorporating a dye into an emulsifiable polymeric resin (col. 3, lines 25-27).

The alleged combination of *Sacripante et al* with *JP '975* does not render the presently claimed invention *prima facie* obvious. In this regard, the alleged combination of *Sacripante et al* with *JP '975* would not have resulted in coloring particulates containing an oil soluble dye and a vinyl polymer which are separate compounds, as recited in claims 1, 13, 17 and 20. In stark contrast with the present invention, *Sacripante et al* discloses that "the dye is chemically attached to the emulsifiable polymer resin, as either a main chain constituent or a side chain constituent, rather than being separately mixed with a polymer resin [emphasis added]" (col. 3, lines 43-46).

Moreover, the Examiner has agreed that amending the independent claims to recite that the oil soluble dye and the vinyl polymer are separate compounds would be effective to overcome the §103(a) rejection based on the combination of *Sacripante et al* with *JP '975*

(Interview Summary). Accordingly, for at least the above reasons, withdrawal of this rejection is respectfully requested.

*Tsutsumi et al* discloses an aqueous ink for inkjet printing (col. 2, lines 51-54). As acknowledged by the Patent Office, *Tsutsumi et al* fails to disclose or suggest the formula (II) dye recited in claim 1 and the formula (III) dye recited in claims 13, 17 and 20. In this regard, the Patent Office has relied on *JP '975* for disclosing the dyes recited in the claims. However, as shown in the attached Declaration Under 37 C.F.R. §1.132 of Takahiro Ishizuka (Declaration), the present invention provides surprising and unexpected results in the form of improved dispersion stability over an ink containing a dye and a polymer disclosed by *Tsutsumi et al.*<sup>1</sup>

As discussed in the Declaration at page 2, Comparative Example 1 in the Declaration was prepared in a similar manner as Preparation Example 1 and Example 1 described at pages 133, 134 and 137 of the instant specification, except that a dye and a polymer disclosed by *Tsutsumi et al* were used in order to compare the dispersion stability of an ink formed therefrom. In particular, the vinyl polymer solution (A-1) used in inventive Preparation Example 1 was substituted with the polymer obtained in accordance with Preparation Example 1 at columns 13 and 14 of *Tsutsumi et al*. As well, the oil-soluble dye (I-30) used in inventive Preparation Example 1 was substituted with the Vail Fast Blue 2606 that was used in Preparation Example 1 of *Tsutsumi et al*. In addition, the isopropyl alcohol used in inventive Preparation Example 1 was substituted with tetrahydrofuran. Applicants submit that tetrahydrofuran was used as a solvent because the Vail Fast Blue 2606 was hardly dissolvable in isopropyl alcohol.

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<sup>1</sup>During the interview, the Examiner stated that a proper rule 132 declaration which shows that the present invention provides unexpected results would be effective to overcome the §103(a) rejection. In addition, the Examiner agreed to consider such a declaration at this stage of prosecution.

By employing the above procedure, the dispersion stability of an ink containing the dye and polymer disclosed by *Tsutsumi et al* was examined. As discussed in the Declaration at page 3, Comparative Example 1 exhibited severe aggregation of colorant particles when one week passed. Thus, it is clear that Comparative Example 1 did not provide an ink having sufficient dispersion stability.

By comparison, referring to Table 3 at pages 144 and 145 of the instant specification, several exemplary inks were prepared in accordance with the present invention. The inks were allowed to stand still at 25°C for one month. Thereafter, each exemplary ink was filtered with a filter having a 0.2 µm mesh, and the degree of coloration of the used filter was examined. As can be seen from Table 3, twenty-five of the twenty-seven exemplary inventive inks which were tested hardly caused coloration of the filter, and the two other exemplary inventive inks caused only slight coloration of the filter. None of the tested exemplary inventive inks caused considerable coloration of the filter.<sup>2</sup>

As discussed at page 145 of the instant specification, the experimental test results set forth in Table 3 show that the inventive inks exhibit superior dispersion stability. As well, upon comparison of the dispersion stability of the inventive inks with that of the ink of Comparative Example 1, it is apparent that the inventive inks provide surprising and unexpected results in the form of improved dispersion stability.

Absent an improper resort to Applicants' own disclosure, one of ordinary skill in the art would not have recognized the surprising and unexpected results the present invention can provide as shown in the attached Declaration. For at least the above reasons, it is apparent that

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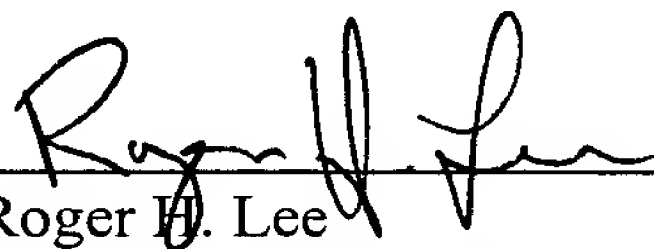
<sup>2</sup>The comparative ink containing Compound No. H-1 caused considerable coloration of the filter.

the present invention is not obvious over the combination of *Tsutsumi et al* and *JP '975*.  
Accordingly, withdrawal of the §103(a) rejection is respectfully requested.

From the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order, and such action is earnestly solicited. If there are any questions concerning this paper or the application in general, the Examiner is invited to telephone the undersigned.

Respectfully submitted,

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